Subject: Re: Vertex fitters' problems
Posted by Ralf Kliemt on Thu, 20 Jun 2013 13:47:58 GMT
View Forum Message <> Reply to Message

Hi.

I did some fixes to Rho and the fitters. We had deeply hidden bugs...

Now, I ran the same simulations just as you did and modified the analysis macro to my liking (attached). The outcome is strange BUT:
A) ChiVtx and KinVtx give somewhat similar vertex resolutions. They should as these are the same (P.Avery) Algorithm programmed by different colleagues.
B) POCA is comparable to the fitters above - because it is the seed value for them. I looked it up and the KinVtx actually converges, so I blame the few excess energy available in your system. Both the kaon and pion tracks will almost move along with the CMS.
C) The PRG fitter (Billoir algorithm) produces better results. Wonderous to me but there we go; maybe its in the algorithm. Both fast and full fit give the same resolution where I would blame the kinematics again.

I hope I could solve the issues now.

Cheers
Ralf

PS: The overly good resolutions of the KinVtx came from the fact that the vertex vector was always zero and the negative MC coordinates were plotted.

## File Attachments

1) vtxtest_ChiVtx.pdf, downloaded 479 times
2) vtxtest_KinVtx.pdf, downloaded 433 times
3) vtxtest_Poca.pdf, downloaded 467 times
4) vtxtest_FastPrg.pdf, downloaded 467 times
5) vtxtest_FullPrg.pdf, downloaded 465 times
6) match_kinvtx.C, downloaded 486 times